Debunking Those New Reassurances on Fallout

Glimpses of Our "Sheltered" Future From The Latest Report on the Civil Defense Program, Pages 2 and 3

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Still Playing A Phony Numbers Game to Cover Up Testing

The place where the body is buried in the report of the Federal Radiation Council on fallout from weapons tests lies at the end of a paragraph which generated optimistic headlines, as it was intended to do. This said that the average whole body burden dose from all testing through 1961 would amount, over the next 30 years, to less than 5 percent of the natural background radiation to which man has always been exposed. The figure which follows this on dosage to the bone, whence come bone cancer and leukemia, is larger but still looks reassuring if not examined too closely. This estimates that the average bone dose over 70 years* will be less than 10 percent of that from natural background. These figures make the extra risk from further testing seem slight. But then the last sentence of this key paragraph says, "Any further testing will, of course, increase the exposure." This is the place, as the old railroad grade crossing signs used to say, to Stop, Look and Listen.

But What If Testing Continues?

The eye and the mind pass quickly over this sentence. It did not make headlines. No newspaper that I have seen stopped to ask how much the hazards would be increased by further testing. The report itself says nothing about this beyond the one cryptic sentence. Fallout dissipates itself over the years, some particles quickly, some slowly. If testing had stopped at the end of 1961, one could rest content with the 30 and 70 year averages on which the reassuring estimates of this report are based. But if testing starts up again, as it has, and if new series of tests are to continue indefinitely as they threaten to do, then these 30 and 70 year averages become deceptive. With fresh fallout every year, we will no longer have a steady diminution of man-made radioactivity from weapons testing. Those comforting averages—5% of natural background for the whole body, 10% for the bone—will become obsolete. A more relevant figure now available, a more genuine measure of the danger, is the fallout *during and just after a year of testing* as compared with natural background. There are such one-year figures in Table 1 of the report, though remarkably little attention has been paid to them. These one year figures, as Appendix A explains, are for 1958-59, the years of highest dose prior to the big Russian tests of 1961 from which the highest doses will not be registered until 1962 and 1963. These one-year figures show that for the whole body and for the reproductive cells, the amount of dosage in 1958-9 was not 5 percent of natural background but from 10 to 25 percent. For the bone marrow it was 20 to 40 percent of natural radiation and for the bone the one year dose was from 23 to 60 percent of natural radiation. These figures are very different in their implication from the 5 and 10 percent figures.

The news stories and the headlines stressed the estimate in the report that there was only one chance in a million that an individual *of the next generation* would be born with a *gross* physical or mental defect as a result of fallout from testing through 1961. But these chances will go up considerably if testing continues. This estimate of genetic damage to the next generation got itself confused in the minds of many newspaper readers with a simple one-chance-in-a-million of harm to anyone. But Table 3 of the report shows that for *this generation* on the 70-year average basis from past tests there is one chance in 300,000 of leukemia and one chance in 100,000 of bone cancer. But again if testing continues, and if fallout stays somewhere around the 1958-59 level, if it is from 20 to 40 percent of natural radiation for the bone marrow instead of 10 percent, and 23 to 60 percent for the bone instead of 10 percent, then the chances of leukemia and bone cancer will rise correspondingly. Here we begin to see the importance of striving for a new test cessation agreement, and it is here that the report leaves us in the dark. Otherwise it would have become a plea for test cessation not a cover-up for test resumption.

Even these figures, I now want to show, understate the real

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*** 30 year averages are used for genetic and 70 for somatic effects, the former being the average child-bearing age and the latter the average life span.**

Our Solution for the Stock Market

One way to end the stock marekt decline would be to apply to stock speculation the same principles we use in agriculture: That is, a system of support prices for surplus crops which would otherwise have to be sold at distress levels. The unhappy holder of A. T. & T. or IBM, if their prices fell below the support level, could take their stocks to the Treasury and turn them in. This would end panic about stock prices, and with it the slump in the sale of mink stoles and Cadillacs. Ours is unfortunately a not too rational economy in which the economies of the rich soon become the privations of the poor, as happened in 1929. It would be cheaper to pour a few billion dollars quickly into the stock market now, farm relief style, than allow it to trigger a panicky slump in business at home and abroad. We can already visualize the construction of storage facilities for surplus shares of du Pont and General Motors by some future Billy Sol Estes. What better way to defeat Communism and spread People's Capitalism all over the world than by giving away surplus shares in American industry abroad, as we do surplus wheat and corn? Henry Wallace wanted to assure the Hottentot a quart of milk a day. We'd top his offer with a better. Win the Zulu for free enterprise forever with a share of Standard Oil (N.J.).

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danger. They do so in several ways. The first is that they do not put weapons fallout into the context of other sources of man-made radiation such as medical uses. In its first report two years ago the Federal Radiation Council gave the average annual genetically significant dose from medical, occupational and other man-made sources of radioactivity at from 80 to 280 millirems a year. If we add to this its new 10 to 25 millirem figure for weapons fallout in one year and the 100 millirem figure it gives for natural radiation, we get a total of from 190 to 405 millirems a year. But Table 1 shows 170 millirems a year as the Council's safe limit for peacetime populations. In other words when you add these figures you see that under conditions of continued testing, the total radioactivity to which the population is exposed from nature, civilian uses of radiation and fallout is at or above the level the Council considers safe for the population as a whole. We are already at the point where we must begin to think about protective measures.

Shorter Lived Particles Ignored

There is a second way in which these figures understate the danger. They do not seem fully to take into account radioactive isotopes other than Strontium 90, Cesium 137 and Carbon 14. Otherwise the figures would look very different. The shorter lived isotopes tend to be dismissed as of little importance. But a study published by *Science,* weekly organ of the American Association for the Advancement of Science, last October 6, disclosed that right after years of testing the short-lived isotopes are of far greater importance than hitherto believed. This study, by two AEC scientists and a third from the U.S. Nuclear Corporation, showed that for eight months in 1959 dose rates from fallout over New York City "reached as high as 50 percent of total background rates." Their figures for five selected short-lived isotopes (not including Iodine 131) showed that they provided far more radioactivity than Strontium 90 or Cesium 137 and called for "a more thorough evaluation of the world-wide effects of the shorter-lived nuclides." A similar warning was given a year earlier when Dr. Ralph Lapp at the 1960 radiation hearings before the Joint Committee on Atomic Energy criticized the Federal Radiation Council for not paying enough attention to the shorter lived particles and pointed out that a report by Dr. Gustafson at the Argonne National Laboratory showed that fallout over Chicago when these other particles were also measured amounted to 70 percent of natural background. Looked at over 30 or 70 years, of course, these less well known particles soon die out. But while testing goes on, they add up to far more than any comforting 5 percent of natural background.

One of these shorter-lived radioactive substances is Iodine-131, and this brings us to yet another way in which the danger is understated. Iodine-131 can cause cancer of the thyroid, and children are especially susceptible to it. Little attention was paid this in the newspaper summaries, and the subject is introduced in the Federal Radiation Council report in a way which would lead the unwary reader to think it of little importance. "The half-life of radioactive iodine, the principal source of the thyroid dose, is only eight days," the report says, "and the peak dose rates persist for a relatively short period of time. For this reason thyroid doses are not included in the table." But when the reader studies the report more closely he finds the admission that "the likelihood and extent" of thyroid cancer "have been considered to be about the same as other malignancies for comparable exposure," i.e. for bone cancer and leukemia. The close reader will also notice that Iodine-131 was not quite as evanescent as the reference to 8-day half-life may have led him to believe. The report admits, "Doses to the thyroid from the major past tests were estimated to have ranged from 100 to 200 millirems *per year* (our italics) during and immediately following periods of

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Who Needs Water?

"Water allotment for shelters is 1 quart per person per day for 14 days. OCDM technical bulletins had recommended 1 gallon per person per day for drinking, washing and other purposes. Occupants of a simulated shelter who had access to 1 gallon of water per day complained most about lack of water for bathing. . . . The OCDM Interdepartmental ad hoc Advisory Group on Research and Development for Food for Shelters recommended 2 quarts per person per day as a minimum 'survival' allowance for a 2 week stay in shelters. Public Health Service joined in this recommendation.

"In deciding upon a water allotment one-fourth that recommended by OCDM and one-half of the 'survival' allowance recommended by the advisory group, the Office of Civil Defense pointed to the experience of soldiers in desert training or combat: 'Studies and experience of American, British and German troops have indicated that soldiers exposed to heat and sun under desert conditions, can live on 1 quart of water per day for periods exceeding 2 weeks. Therefore, on the basis of these studies, the Department of Defense has concluded that 14 quarts of water per shelter occupant under sedentary conditions combined with an austere low-protein diet will permit an organized and informed group to survive without deterioration of health for 2 weeks'."

—National Fallout Shelter Program, report by the Holifield Military Operations Subcommittee of the House Committee on Government Operations, May 30.

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Children Given Special Role in the Pied Piper Scenario of the Shelter Program

"Among the eligible institutions [for the new Civil Defense program's incentive payments] schools are to be emphasized. Fallout shelters in schools would serve not only to insure a good distribution of shelters in relation to residential populations but would induce a particularly favorable response associated with protection of the Nation's children. . . .

"The obvious advantages of a school-oriented shelter program are the frosting on a cake of complications which baffle policymakers. . . . Questions like these abound. . . . Shall financing for shelter construction be raised locally from school construction funds, general tax revenues, bond issues or special assessments? . . . Will funds for shelters eat into plans for needed expansion of educational facilities? . . .

"The psychological effects on children of windowless schools are largely unknown. In a school-oriented program many more such classrooms will be built, and they will be used by generations of school children."

—Holifield Shelter Report, May 30.

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testing." Natural radiation is figured at 100 millirems a year.

In other words Iodine-131 alone during and following periods of testing contributed "from 100 to 200 millirems per year" or from 100 to 200 percent of natural background. Here again we find ourselves far away from that reassuring 5 percent figure. The report says "These values apply only to individuals who were infants at the time of highest concentration of radioactive iodine." It says "the average value for all age groups was about a tenth as much," which leads us to another way in which this report understates the dangers. This lies in the tactic of averaging, which slurs over the enhanced danger to particular age groups, especially children. Appendix A admits that "the contribution of radio-iodine to the dose to the thyroid gland is much larger in the case of infants than in older persons" but it does not indicate how much larger. Apparently, judging from the figures in the preceding paragraph, it is about 10 times greater. Similarly Appendix A explains that for Strontium 90 "Early concentrations in the bone will be greatest for those children who are less than 1 year of age at the time that peak concentrations of fallout occur in food. The average bone and bone marrow doses to such children as estimated in Table 1 are much larger than the average to the whole population." Again the report fails to say how much larger. Table 1 gives no separate figures for children. But its one year figures, as we pointed out, already show even for the population as a whole that the dose to the bone marrow after a heavy testing year is 20 to 40 percent of natural radiation and for the bone, 23 to 60 percent. How much larger is the average for young children. What does "much larger" mean? The report is silent.

How Averages Can Mislead

Global national averages hide the special dangers to special areas as well as to special age groups. It does not help migratory farm workers to know that their annual income when averaged out with Nelson Rockefeller's is big enough, theoretically, to provide a safe backlog for their retirement. Nor does it help residents of the Mississippi Valley or other radioactive "hot spots" to know that the amount of fallout they receive, when averaged out with more fortunate parts of the country, is well below the danger limit.

The real picture is different from that of the smooth distribution which global averages over 30 to 70 years, tend to create. Freak weather, sudden storms, may bring a heavy downpour of short lived radioactive substances just when they are most virulent right after fresh tests. A hurricane along the East Coast and a high pressure area over the eastern half of the country last September 17-20 seem (according to testimony last Tuesday before the Joint Committee on Atomic Energy by Dr. Donald R. Chadwick of the U.S. Public Health Service) to have dumped unusually heavy amounts of Iodine-131 (and Strontium-89) in the southern and southeastern states from the heavy Russian tests which had begun three weeks earlier. New Orleans reported 530 micromicrocuries of Iodine-131 per liter of milk on Sept. 25; St. Louis, 500 on the 27th. For the three months following the onset of Soviet testing, average fallout of Iodine-131 in several large areas of the Mississippi Valley was well above the danger level. Similar freak storms May 8, 10 and 12 of this year, according to Dr. Lester Machta of the U.S. Weather Bureau, dumped debris

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Safe for Drinking . . . If . . .

"A strong bid for use of sterile, canned drinking water in shelters was made by firms experienced in supplying Navy shipboard requirements. . . . The costs of procuring 750 million quarts of canned water [15 qts. per person for 50 million shelter spaces—IFS] at 30 cents a quart, and of moving this mountain of water to local warehouses and individual shelter sites, dissuaded the Office of Civil Defense from the canned water approach. Fiber drums, lined with plastic (polyethelene) bags, filled with tap water, would run the cost down to 2 cents a quart.

"The first procurement of liners for the water drums, to be used in the 14-city provisioning test, did not turn out well. . . . Of 22 firms invited to bid by the Defense Supply Agency, only 2 responded. A fixed price contract of $3,962 was awarded to a Norfolk, Va., firm for 20,000 plastic bags. . . . Leakage and seam strength tests were performed by the contractor and a testing laboratory. The bags passed the various tests, but upon the first filling of water of Tallahassee, Fla., early in 1962, half of the bags leaked. . . .

"The Public Health Service has informed the Office of Civil Defense that the sealed polyethelene container method will provide safe water for long periods, if the water is not contaminated at time of filling. . . . The emptied drums will be converted into commodes by fitting toilet seats over them."

—National Fallout Shelter Program, report by the Holifield Military Operations Subcommittee of the House Committee on Government Operations, May 30.

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How They Hope to Have 2,100,000 Hospital Beds Ready for 60,000,000 Casualties

"The planning goal is 9,500 [emergency] hospitals which would mean 1,900,000 beds at 200 per unit. . . . The hospital units are stored in crated form near the buildings where they are to be assembled. . . . In case of emergency, the units will be assembled by local persons trained in accordance with an approved community disaster plan. . . .

"Medical stockpile goals are based on planning assumptions formulated under OCDM guidance in 1958. It is assumed that in a population of 180 million, there will be 60 million casualties, 12 million immediate deaths, which could increase to 34 million within 30 days and more than 40 million at the end of 6 months. One-third of the initial casualties, or about 20 million, would survive beyond 6 months, but a majority of these would recover at some time within that period. Medical care demands would increase greatly in the first 6 months, not only because of mass casualties but because of inadequate sanitary facilities, crowding and other health hazards to uninjured survivors. . . .

"There are approximately 1,600,000 fixed hospital beds in the United States. The planning assumptions estimate that 600,000 of these would be destroyed, and another 600,000 would be denied use because of fallout radiation, leaving 400,000 for immediate use. The civil defense emergency hospitals, being placed in selected locations, are expected to suffer much less loss. The estimate is that 90 percent of the emergency beds would be available for immediate use. [90% of 1,900,000 is 1,710,000 plus the 400,000 surviving normal hospital beds equals 2,110,000 beds for these 60,000,000 casualties—IFS].

—Holifield Shelter Report, May 30.

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The Peril Rises As the Weapons Grow Bigger and Tests More Intense

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from the recent U.S. Christmas Island tests on the Midwest. The highest concentration of Iodine-131 was in Wichita where it reached 660 mmc per litre of milk; in Kansas City, it reached 600 mmc per litre. A level of 100 mmc per litre takes one into Range 3, the danger zone.

No Way to Check the Figures

This report and its appendices were prepared not in a spirit of science but of public relations. It contains no references so that there is no way for scientists to check back to the sources of its estimates. Appendix A says the numbers given for dose ranges from tests through 1961 "represent estimates made using somewhat different but plausible assumptions concerning such factors as fallout distribution, the effects of weathering and shielding, and the movement of radioisotopes from the environment to man." But it does not give these assumptions so they can be independently evaluated. The most important gap in the report is its failure to make any estimates as to the danger which continued testing would create. The first report by the Federal Radiation Council, May 13, 1960, when there was still hope that testing might have ceased forever, did give such an estimate. At page 20 it says that Langham and Anderson in their May 1959 testimony before the Joint Committee on Atomic Energy estimated that should testing resume and continue at the average of the five years 1953-58, the numbers given for the radioactivity to which man would be subjected genetically and somatically over 30 and 70 years respectively would have to be multiplied by 8. This would bring fallout up to 40 percent instead of 5 percent of natural background, and the Langham-Anderson figures only covered Strontium 90 and Cesium-137. This provides some numerical clue to the meaning of that cryptic sentence, "Any further testing will, of course, increase the exposure."

Further testing is likely to increase the danger far more than the 8 times estimate of Langham and Anderson since theirs was based on the average of the five years 1953-58. Since then the size of weapons tested and the tempo of testing have risen. All previous testing by the end of 1958 had created 92 megatons of fission; the Russians added 25 megatons of fission from 125 megatons of detonation in the last three months of 1961 alone. Mr. Kennedy in announcing resumption of testing last March 2 said "the total effects" from our new series would "only" be equal to about one percent of natural background. This doesn't sound like much until one recalls that we figure all testing through 1961 only added 5 percent of natural background. So our series this year will be roughly equal in fallout to 20 percent of all previous testing. That would indicate a very large series indeed. The weapons grow larger, each series more intense. The fallout peril will rise accordingly. This is the danger this sugar-coated report passes over so lightly.

Last Minute Censorship at State Dept.

As is well known now, the volume of State Dept. diplomatic papers on relations with China in 1943, recently released, was ready in 1957 (as the date on the title page shows) but held up by Secretary Dulles. Their revelations about war-time China do not cast a flattering light on Chiang Kai-shek. What has not come to attention before is that even this year, after the first copies had gone out, the volume was recalled and at least one page reprinted after remarks critical of Chiang had been taken out.

One of these early press copies contained a new page 398 but with the old one still in it. The old page disclosed that two passages of a report by John Davies, Jr. (whom the China Lobby later crucified via McCarran and McCarthy and whom Dulles dismissed) had been omitted. In their place, asterisks appear in the final version.

The first omitted passage was the first sentence of the report and it said, "The Generalissimo is probably the only Chinese who shares the popular American misconception that Chiang Kai-shek is China. This congenial fiction is worth examining." The other passage omitted, in the middle of the report, said, "The Generalissimo seeks to dominate because he has no appreciation of what genuine democracy means. His philosophy is the unintegrated product of his limited intelligence, his Japanese military education, his former close contact with German military advisers." We are happy to rescue these passages from the censor and to restore the original untouched portrait.

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